

September 13, 2010

Mr. Alan Fетters
Alaska Energy Authority
813 W. Northern Lights Blvd.
Anchorage, AK 99503

Re: Kongiganak options for underground facility relocation

Dear Mr. Fетters:

On August 28, 2010, I visited Kongiganak to evaluate options for correcting an exposed primary powerline. To facilitate the installation of a new fuel tank farm and the construction of the Village's new airport, a section of three-phase overhead powerline was removed, and a single-phase underground powerline was installed. The underground powerline was located in an area subject to daily tidal erosion and across a drainage path. The tidal erosion and the drainage from water have exposed the primary in two locations. The primary conductor is 1/0 concentric and is in 2" PVC duct. Due to the uneven erosion in the tidal zone, the duct has begun to separate and will eventually expose the primary cable contained within it. The Village has installed a sign in the vicinity of the exposed cable that identifies the hazardous condition and prohibits the mooring of boats near it.

In conversation with the Village's power plant manger, Harvey Paul, three options for correcting the exposed primary were discussed:

- 1) Install two poles with new overhead primary at the location of the erosion, with the new poles being installed in-line with the upstream poles.
- 2) Install two poles with new overhead primary, with the new poles being installed further inland from the Kongiganak slough.
- 3) Install new underground primary further inland from the Kongiganak slough.

From a long-term maintenance perspective (avoidance of future erosion issues and ease of future repairs), the second option is preferred; with options 1 and 3 following in order of preference.

From the perspective of avoidance of future conflicts with the utilization of the dock, the third option is preferred; with options 2 and 1 following in order of preference.

From the perspective of cost, option one is preferred, with options 2 and 3 following in order of preference.

As a funding source for extensive corrective measures has not been identified; and as the local the local power provider expressed a willingness to set the required poles and anchors, and to string the conductors; and as the required overhead primary conductor is available on site, it is my recommendation that option two be pursued.

Option two will require: one 50 foot class 4 pole, one 45 foot class 4 pole, one (V)C1A framing materials, one (V)C8 framing materials, two sets of materials for converting existing framing to (V)C8 framing, eight crossarm jumpering pins, two pole top jumpering pins, five guys, two plate anchors, and other ancillary materials.

With the agreement of the Alaska Energy Authority that option two is an acceptable solution for the remediation of this concern, I can provide a non-surveyed design package, for the required facilities within the scope of the original proposal.

Timeline for construction: If funding can be found for the required materials, they should be requisitioned promptly and shipped to site. It will only be cost effective to barge the poles to site. The remaining items can be barged or flown to site. A complete material list can be provided within three days of the Alaska Energy Authorities agreement with the suggested solution. A simple drawing indicating the required work will be prepared, and forwarded to Mr. Scott for agreement/approval. After the materials have arrived on site, I propose to return to the Village to stake the improvements in coordination with Mr. Scott. At the request of the Alaska Energy Authority a quality assurance site visit can be provided (this however, will incur an additional engineering field day cost).

If you have any questions regarding this report or require a detailed cost breakdown for each option prior to approval of recommendation, please do not hesitate to call me at 242-7669.

Regards,



Gregory M. Errico, P.E.